

IN THE CLAIMS

The claims are as follows:

1. (Currently Amended) A method of forming at least a portion of a golf ball core which comprises:
 - mixing a resilient polymer component, a free-radical initiator, and a reinforcing polymer component to provide an uncrosslinked first mixture having a rigidity ~~as determined by~~ a flexural modulus greater than about 3.5 MPa;
 - forming the first mixture into a plurality of shells in a desired shape, wherein the reinforcing polymer component imparts sufficient rigidity to the shells to maintain the desired shape until the first mixture is crosslinked;
 - providing a center;
 - assembling at least two shells from the plurality of shells concentrically about the center to form a first mantle layer, wherein the first mantle layer and center together form the golf [[a]] ball core; and
 - applying sufficient heat and pressure to the core for a time sufficient to at least partially crosslink the first mixture in the at least two shells, thereby curing at least a portion of the golf ball core.
2. (Currently Amended) The method of claim 1, wherein the step of forming the first mixture comprises forming the first mixture into a plurality of shells having ~~is formed into~~ an ellipsoidal shape.
3. (Original) The method of claim 1, which further comprises selecting the resilient polymer component to have a molecular weight average of between about 50,000 to 1,000,000.
4. (Original) The method of claim 1, which further comprises selecting the reinforcing polymer component to have a crystalline melting temperature between 35°C to 120° C.
5. (Original) The method of claim 1, wherein the first mixture is formed into a plurality of shells by injection molding.

6. (Currently Amended) The method of claim 1, wherein the step of forming the first mixture into a plurality of shells in a desired shape comprises ~~desired shape is provided by~~ compression molding the first mixture.
7. (Currently Amended) The method of claim 1, wherein the golf ball core has a midpoint and the center of the core is disposed within about 0.5 mm from the midpoint.
8. (Original) The method of claim 1, which further comprises adjusting the flexural modulus of the uncrosslinked first mixture to at least about 7 MPa.
9. (Currently Amended) The method of claim 1, wherein the step of mixing a resilient polymer component, a free-radical initiator, and a reinforcing polymer component to provide an uncrosslinked first mixture ~~[[which]]~~ further comprises selecting components to provide a crosslinked first mixture having ~~adjusting~~ a loss tangent of ~~the uncrosslinked first mixture to~~ less than about 0.15 at -60°C and less than about 0.05 at 30°C~~[[,]]~~ and ~~adjusting the~~ a tensile storage modulus ~~[[to]]~~ of greater than about 100 MPa at -60°C and greater than about 50 MPa at 30°C, each when measured at 1 Hz and one percent strain.
10. (Currently Amended) The method of claim 1, wherein the reinforcing polymer component has a melting temperature of about 35 °C to about 120°C ~~and the crosslinking temperature are selected to differ by about 60°C to 160°C.~~
11. (Currently Amended) The method of claim 1, wherein the golf ball core comprises a solid center or liquid center, and optionally comprises elastic windings about the solid center or liquid center ~~is selected to comprise a center including surrounding elastic windings, a solid center, or a liquid center.~~
12. (Currently Amended) The method of claim 1, which further comprises forming at least one additional layer about the center prior to assembling the at least two shells from the plurality of shells concentrically about the center, after assembling the at least two shells concentrically about the center, or after heating the golf ball core.

13. (Original) The method of claim 12, wherein the additional layer is formed around the core after heating the core to provide a cover disposed concentrically about the golf ball core.

14. – 33. (Canceled)

34. (Previously Presented) A method of forming a golf ball, comprising:

mixing a resilient polymer component and a reinforcing polymer component to provide an uncrosslinked first mixture having a flexural modulus of greater than 3.5 MPa, wherein the reinforcing polymer component has a sufficiently low glass transition temperature to permit mixing of the reinforcing polymer component and the resilient polymer component while avoiding substantial crosslinking;

forming the first mixture into a plurality of shells in a desired shape, wherein the reinforcing polymer component imparts sufficient rigidity to the plurality of shells to maintain the desired shape until the first mixture is crosslinked;

providing a center;

assembling at least two shells from the plurality of shells concentrically about the center to form a first mantle layer, wherein the first mantle layer and center together form a golf ball core; and

applying sufficient heat and pressure to the golf ball core for a time sufficient to at least partially crosslink the first mixture in the at least two shells, thereby curing at least a portion of the golf ball core; and

forming a golf ball cover disposed about the golf ball core.

35. (Previously Presented) The method of claim 34, wherein the step of forming the golf ball cover comprises the steps of:

providing a cover material, wherein the cover material comprises urethane, balata, a partially neutralized ionomer, or a fully neutralized ionomer; and

forming the cover material about the golf ball core.

36. (Previously Presented) The method of claim 34, further comprising the steps of:

providing a crosslinking agent; and

mixing the crosslinking agent with the first mixture.

37. (Previously Presented) The method of claim 34, further comprising the steps of:
providing a free radical initiator; and
mixing the free radical initiator with the first mixture.
38. (Previously Presented) The method of claim 37, wherein the free-radical initiator is an organic peroxide.
39. (Previously Presented) The method of claim 34, wherein the reinforcing polymer component comprises a block copolymer ether/ester, an acrylic polyol, a transpolyisoprene, a transpolybutadiene, a 1,2-polybutadiene, an ethylene-vinyl acetate copolymer, a polyethylene or copolymer thereof, or a cyclooctene.
40. (Previously Presented) The method of claim 36, wherein the crosslinking agent comprises a metallic salt selected from the group consisting of an unsaturated fatty acid, a monocarboxylic acid, and mixtures thereof.